MOTION & CONTROL NSK

TECHNICAL INSIGHT

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# Low-noise Thrust Needle Roller Bearing for EV, PHV

## Development Background

Compared to combustion engines, electric motors are much quieter, so noises previously masked by the sound of the engine have come to stand out.

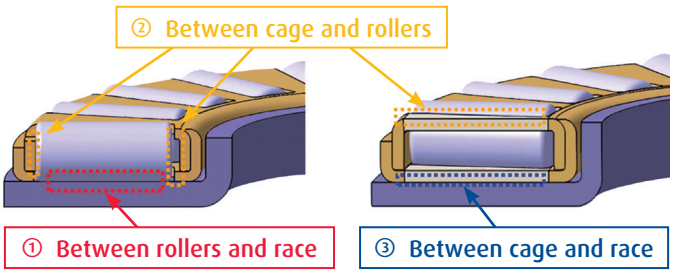
⇒ We developed Low-noise Thrust Needle Bearing for various applications including automotive transmissions.

## Newly development

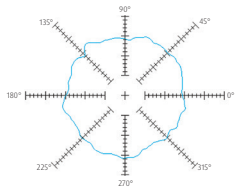
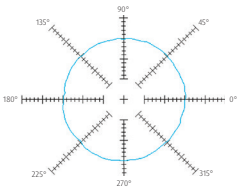
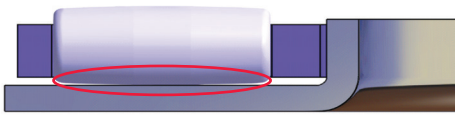
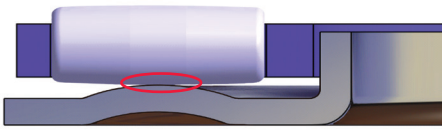
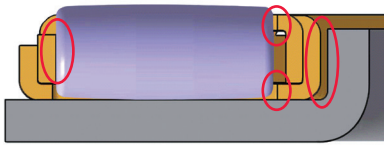
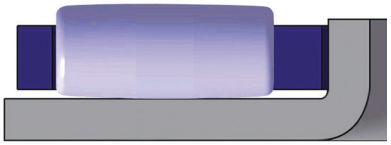
### Noise Factor

Thrust bearings primarily produce noise at following three areas:

① Between rollers and race
② Between cage and rollers
③ Between cage and race




### Product Features

| | Conventional | Newly development |
|---|---|---|
| Roller |  | Reduced the out of roundness by about 1/3 — 1/5  |
| Race | **Flat race**<br>Noise between rollers and race  | **Convex center portion**<br>The convex portion helps reduce noise from contact between rollers and race  |
| Cage | **Steel**<br>Noise between cage and rollers, cage and race  | **Plastic**<br>Used plastic cage to reduce noise  |

## Product Benefits

**Noise of Conventional Product vs. Newly Developed Product**